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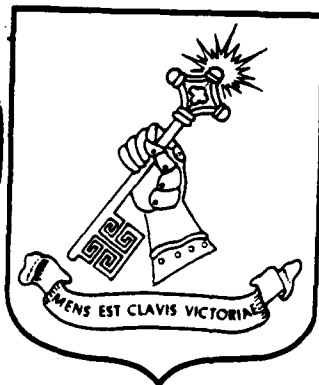
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**The Battle Command Training Program
An Evaluation of BCTP and the
Application of Airland Battle**

**A Monograph
by
Major Bert Frandsen
Infantry**

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**School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas**

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The study concludes that BCTP is definitely enhancing the ability of divisions and corps to execute AirLand Battle doctrine. It links individual tactical competence to successful mission accomplishment of division and corps mission essential tasks. BCTP sets uniform standards for the training of division and corps commanders and their staffs. BCTP has the potential to reverse the historic first battle trend: inadequate preparation of senior commanders and their staffs for combat.

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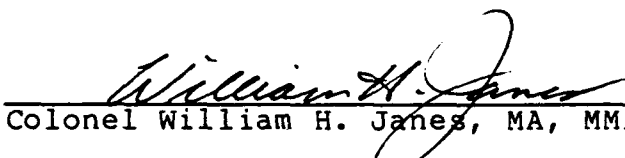
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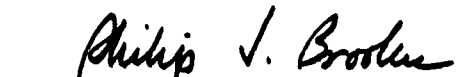
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ABSTRACT

THE BATTLE COMMAND TRAINING PROGRAM: AN EVALUATION OF BCTP AND THE APPLICATION OF AIRLAND BATTLE, by Major Herbert L. Frandsen, USA, 59 pages.

This monograph examines the effectiveness of the Battle Command Training Program (BCTP) in meeting its stated goal: "To enhance the combat proficiency of divisions and corps to execute AirLand Battle doctrine." The study analyzes the degree of realism in the training environment, and the ability of the first ten divisions which completed BCTP to fight in accordance with AirLand Battle tenets.

The ability to replicate the physical, cybernetic, and moral domains of battle serves as the criteria for analysis of realism. The exercise simulation does not portray catastrophic disruption in the cybernetic and moral domain. However, it does portray fog and friction of war. More importantly, the simulation stresses the unit's battlefield operating systems to the degree necessary to identify systemic shortcomings.

The monograph next analyzes the trends in the performance of the first divisions to complete BCTP. The Army's AirLand Battle tenets of agility, synchronization, depth, and initiative are the criterion for analysis. The analysis identifies several major systemic weaknesses including: seeing the battlefield, using appropriate doctrinal tools and procedures, fighting the deep battle, and seizing the initiative from the enemy.

The study concludes that BCTP is definitely enhancing the ability of divisions and corps to execute AirLand Battle doctrine. It links individual tactical competence to successful mission accomplishment of division and corps mission essential tasks. BCTP sets uniform standards for the training of division and corps commanders and their staffs. BCTP has the potential to reverse the historic first battle trend: inadequate preparation of senior commanders and their staffs for combat.

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I. INTRODUCTION

There will be another first battle. We expect to fight it on short notice -- a "come as you are" war. Historical analyses of previous U.S. Army first battles reveal that senior commanders and their staffs have seldom been prepared for war. Instead, they have learned the complex task of controlling large-scale combat at the cost of American blood and sometimes defeat. If this historical trend is to be reversed, senior commanders and staffs need to conduct frequent and realistic training. This training should involve several command levels and the full range of combined arms.¹

The above conclusion, published in America's First Battles, caught the attention of the Army. The problem had been identified. How would it be corrected? Shortly after the book's publication in 1986, the commander of the Combined Arms Center, LTG Gerald T. Bartlett, tasked a group of officers to come up with a concept to get a National Training Center (NTC) for divisions and corps off the ground.² The result was the Battle Command Training Program (BCTP). By October 1989 thirteen units had conducted BCTP rotations. Participation included ten active duty divisions, three national guard divisions, and one corps.

The purpose of this monograph is to assess the extent to which BCTP is achieving its stated goal: "To enhance the combat proficiency of divisions and corps to execute AirLand Battle doctrine."³ The target audience of this monograph is those who are concerned with training at the division and corps level, especially those who have yet to experience BCTP.

This monograph is divided into four main parts. First is some background information on BCTP. Next is an analysis of realism: How well does BCTP portray the physical, cybernetic, and moral domains of battle? Third, we will analyze the trends of performance, using AirLand Battle tenets, of the first ten divisions to conduct a BCTP rotation. In the fourth and last part, we will use the previous findings to determine the extent to which BCTP is meeting its goal of enhancing commander and staff proficiency to execute AirLand Battle. The main sources of information are from interviews with BCTP personnel and a review of division final exercise reports.

II. BCTP BACKGROUND

BCTP is the capstone part of a larger whole, the Combat Training Center (CTC) concept. The four components of the CTC Program are: (1) the National Training Center (NTC), (2) the Combat Maneuver Training Center, (3) the Joint Readiness Training Center, and (4) the Battle Command Training Program (BCTP). The addition of BCTP makes possible the application of CTC methodology from the individual soldier to the corps level. This methodology includes training to Army standards specified in unit mission training plans; using dedicated observer-controllers to ensure uniformity of standards; providing feedback through after action reviews (AARs); conducting realistic combined arms exercises based on mission essential tasks; and stressing all seven battlefield operating systems through a dedicated, doctrinally correct and competitive Opposing Force (OPFOR).⁴

The main elements of the BCTP organization are two mobile training teams, the World Class OPFOR, and the use of the corps battle simulation center. Each mobile training team consists of approximately 45 personnel who independently plan and conduct division level BCTP rotations. A corps BCTP requires both teams during the Warfighter Exercise.⁵ Observer-controllers on the mobile training teams develop a depth of knowledge in their respective operating system that makes them highly effective trainers. They are very valuable resources concerning doctrine and its application.⁶

Gen (Ret) Richard Cavazos and LTG (Ret) David Grange are the senior observers. They serve as mentors. Their mentoring includes everything from one-on-one sessions with division and corps commanders, to group sessions with staffs in the tactical operations centers (TOC), and battalion command groups at the computer work stations. Their depth of combat experience and recognized expertise add greatly to the BCTP experience.⁷

The World Class OPFOR is the enemy. They replicate Soviet or surrogate forces from regiment through front. This doctrinally correct opponent uses the Soviet troop control process and fights to win. The National Security Agency, Defense Intelligence Agency, and the Combined Arms Center Threats Directorate validate the World Class OPFOR to ensure systems, numbers, decision cycles, timing, capabilities, and doctrine are accurately portrayed.⁸

The mobile training teams and World Class OPFOR support each BCTP rotation, which is conducted in two phases, the Battle Command Seminar and the Warfighter Exercise (WFX). Ideally, the seminar

occurs within four to six months of a commander's change of command. The WFX should follow three to nine months later. Early scheduling of BCTP in the commander's tour maximizes BCTP's training value by providing a solid foundation for the commander and his team in developing and maintaining combat proficiency.

The Battle Command Seminar is analogous to the leaders' reconnaissance, i.e., FORSCOM Leader Training Program at the NTC. This five-day seminar takes place at Fort Leavenworth and consists of a package of reading material supplied before the seminar, decision exercises, and workshops. The goal of the Battle Command Seminar is to "provide division and corps commanders an opportunity to focus on application of AirLand Battle doctrine and the command and staff actions that form the basis of a combat ready warfighting team."⁹ Seminar participants include the division or corps commander, assistant commanders, major subordinate commanders, chief of staff, principal staff officers, and their deputies. A generic seminar schedule is included at Appendix A.

A survey-based study by the Rand Corporation determined the seminar is successful in providing units the opportunity to improve staff procedures and teamwork. However, the reading program has become a less significant component of the BCTP experience than was originally planned. The Rand Study found that fewer than half of the participants read more than one-third of the material.¹⁰ A list of books in the reading program is included at Appendix B. It is extensive and focuses on professional development as opposed to skill enhancement.

Phase two consists of the Warfighter Exercise (WFX). This is designed to provide division and corps commanders and staff the most realistic and demanding training possible, short of actual war.¹¹ The corps commander serves as the senior trainer for the division undergoing the WFX. A warfighting CINC, or the corps commander's next higher commander, serves as the senior trainer for a corps WFX. The commander of BCTP operates in direct support of the senior trainer. BCTP uses an advanced computer simulation, a competitive OPFOR, trained observer-controllers, and detailed after action reviews to help units improve their warfighting skills. In the division level WFX, the division and its brigades, DIVARTY, DISCOM and separate battalions establish their command posts in the field. A corps WFX is similar; the corps and its major subordinate commands establish their command posts in the field. Unless otherwise stated, this paper will be addressing division WFX's. In the next section we will take a closer look at the Warfighter Exercise and its participants as we analyze the degree of realism portrayed.

III. BCTP Training Environment

In order to analyze the degree of realism in BCTP, we must first establish evaluation criteria. Professor James Schneider, School of Advanced Military Studies, has proposed three domains of battle -- the physical, cybernetic, and moral domains.¹² Schneider's graph at Appendix C shows how destructive tempo in the physical domain affects the cybernetic and moral domains. As destructive tempo increases, units become disorganized in the

cybernetic domain and ultimately disintegrate in the moral domain. The degree of destruction that armies and units can bear will differ -- units having steep curves become disorganized and disintegrate faster than units having flatter curves. As previously stated, the WFX is designed to provide division and corps commanders and their staffs the most realistic and demanding training possible. In this section, Schneider's model will serve as the criterion for analyzing the degree of realism in the BCTP training environment.

The Physical Domain

The physical domain of battle is concerned with the process of destruction and includes the effects of weapons, munitions, terrain, weather, logistics, and other physical factors.¹³ The Joint Exercise Support System (JESS) and scripting help portray the physical domain of battle in BCTP. JESS is a computer simulation that includes combat, combat support, and combat service support aspects of forces in battle. Scripting is a manual process that supplements JESS's limitations, especially in intelligence functions, and allows BCTP to control battlefield activities. We will next examine how JESS and scripting work to portray the physical domain.

JESS simulates the effects of most of the weapons found in the United States and threat inventories. There is an ongoing program to upgrade the simulation to include new weapons. A detailed list of weapons and munitions included in JESS is at Appendix D.¹⁴

JESS portrays terrain in various contingency areas of the world. Available "playboxes" include Korea, Europe, Central

America, and Southwest Asia. Terrain in JESS is divided into hexes. Each hex measures three kilometers from flat side to flat side. Terrain in the hex is uniform. Thus, the protection and mobility characteristics caused by varieties of urbanization, vegetation, or elevation will not vary within the hex. This simulation also does not portray line of sight between individual weapons systems. For this reason, skillful use of terrain in sighting weapons systems or in dismounted maneuver is not possible. As a result, JESS portrays heavy forces fairly well for the level of resolution needed on a division or higher exercise, but has significant problems with dismounted infantry.

Weather is portrayed in a very general fashion. Visibility can be affected by day, night, or cloudy weather. Smoke is not currently played. Temperature and wind affect the chemical module only. Weather conditions have no effect on trafficability.¹⁵

JESS provides a much greater degree of realism in logistics than previous division and corps simulations. For example, units must plan and conduct resupply and personnel replacement operations. Combat service support units must bring ammunition and fuel forward in convoys, and units must draw necessary supplies. JESS also portrays traffic congestion which makes transportation management extremely important. If units fail to conduct effective sustainment operations, combat forces will not be able to accomplish their mission.¹⁶

Scripting provides the means for BCTP to fill in where JESS leaves off. Scripting falls into two categories -- intelligence and maneuver. Intelligence scripting accounts for about 80 percent

of the scripting effort and provides intelligence inputs into both the Blue and OPFOR intelligence system based on their respective collection assets, capabilities, and, most importantly, collection taskings. Maneuver scripting adds to realism by including such functions as legal, PSYOPS, civil affairs, and other events the BCTP commander may want included in the exercise that cannot be produced by JESS.¹⁷

Thus, JESS and scripting combine to portray the physical domain of battle. General Cavazos says JESS is about 60 percent accurate, but far better than the old method of throwing dice.¹⁸ A Rand Corporation study concludes that JESS "plays the wars fairly well."¹⁹ As experience increases and JESS upgrades are incorporated, we can expect JESS to better simulate reality. The next version of JESS will include the effects of smoke, soldier fatigue, and more realistic weapons effects.²⁰ In any event, BCTP personnel conduct "workarounds" through scripting to ensure the exercise is as realistic as possible.

The Cybernetic Domain.

The cybernetic domain is concerned with maintaining organizational structure and processes. It includes organization, command, control, communications, and information systems. In the cybernetic domain, the commander and his staff try to keep the effects of destruction occurring in the physical domain from becoming so disorganizing that unit cohesion is lost along with the ability to apply combat power at the desired time and place.²¹ For example, in the Battle of the Bulge, the Germans paralyzed the

106th Infantry Division by attacking the division's command and control systems. Through intensive patrolling, they knew the location of the regimental and battalion command posts, and attacked them with effective artillery barrages. Accurate artillery, frequency jamming, and Germans armed with wire cutters severed the 106th Division's communications. The division commander lost control, and the division's isolated units fought separate, unsupported battles without central direction.²² The division became unglued in the cybernetic domain.

Another example will illustrate the cybernetic domain at the personal level. Two days later in the Bulge, General Bruce Clarke's CCB of the 7th Armored Division was blocking the Germans who had penetrated through the 106th sector at St. Vith. General Clarke says that what he remembered most clearly at St. Vith was the confusion. Units had become intermingled. Some had panicked; some were lost. Commanders were uncertain whether their information was merely rumor or fact.²³ Clarke said, "The confusion was so great that I can't describe it." From his experience, he concluded that the chief duty of a general was to "keep the confusion from becoming disorganized."²⁴ We should keep these examples of isolated units and confusion in mind as we analyze BCTP's cybernetic domain.

According to BG Wesley Clark, former commander of BCTP, replication of the cybernetic domain is "the heart of what we try to do in BCTP."²⁵ In a WFX, a division puts its three command posts in the field (main, tactical and rear). The division's brigades, DIVARTY, and DISCOM also put their command posts in the

field along with those of the separate battalions (air defense, engineers, signal and military intelligence). The division's corps headquarters will normally provide a response cell. Adjacent divisions may also provide response cells. If not, they will be represented through the scripting function.²⁶

These command posts establish doctrinal communications links. On division exercises, brigade and separate battalion headquarters communicate through their organic equipment to the next lower headquarters which are at JESS workstations in the battle simulation center. At the JESS workstations, battalion commanders, with members of their staffs, fight the battle. Computer generated results appear on the workstation displays. Battalion commanders interpret the results and send messages to the higher headquarters.

Truth filters and an uncooperative OPFOR add to the realism. Truth filters prevent the workstations from having perfect information about the battlefield. For example, enemy units appear on the workstation video display only when they enter into combat with friendly units. This way, the division headquarters, which is two echelons removed from the computer, receives only the information that would normally be available to it. Also, the OPFOR fights to win, and his actions cannot be predicted with certainty. Thus, incomplete information and uncertainty combine to produce Clausewitz's "fog of war" for the division commander and his staff.

Though the "fog of war" is present, BCTP limits its extent. BCTP does not allow the OPFOR to disrupt command and control links. Electronic counter measures (ECM), such as radio jamming, are not

played. The OPFOR does not destroy command and control headquarters with artillery. Units frequently augment their organic communications systems with back-ups that would not be possible if the entire unit actually deployed to the field. One reason for these limitations is that many senior commanders consider a BCTP WFX too important and expensive a training event to purposely allow communications to fail.²⁷

Other aspects of BCTP that prevent full replication of the cybernetic domain are the four echelons missing below battalion level in WFX's -- the company, platoon, squad or crew, and individual soldier. The impact of fear, casualties, and lack of communications at these levels could generate a tremendous amount of friction and fog that could find its way to the top.

Concerning the cybernetic domain, we can conclude that catastrophic damage to command and control -- the type that occurred to the 106th in the Battle of the Bulge -- does not occur in BCTP exercises. However, the "fog of war" in WFXs can produce levels of confusion comparable to that experienced by General Bruce Clarke at St. Vith. According to BG Wesley Clark, the state of disorganization experienced by commanders may not be quite as great as General Bruce Clarke's; but in every case, they experience it, and "they find it very distressing."²⁸

The Moral Domain

The moral domain is concerned with the will to fight.²⁹ The interaction between the cybernetic and moral domain can be illustrated by continuing our example of the Battle of the Bulge.

After the 106th Infantry Division's command and control system became ineffective, the Germans surrounded or routed major portions of the division. The S3 of one of General Clarke's armored infantry battalions described the scene as he arrived in the area around St. Vith as "a case of every dog for himself; it was a retreat, a route...it wasn't orderly; it wasn't military; it wasn't a pretty sight -- we were seeing American soldiers running away."³⁰ Three days after the attack began, between eight and nine thousand American soldiers surrendered, including two regiments of the 106th Infantry Division. Next to Bataan, this was the greatest mass surrender in American history.³¹

In a WFX, units do not collapse like the 106th Infantry Division. The moral domain is very minimal. There is no danger. JESS adds up weapons and plays them off against opposing forces based on such factors as who is in prepared positions, who is moving, etc. In other words, all soldiers are equal in JESS. Soldiers remaining in a unit that has taken 70 percent casualties fight just as hard as those in full strength units. A battalion recently reconstituted with 200 replacements will not suffer degradation due to lack of cohesion.³² However, in spite of the limitations of JESS, BCTP does not neglect the moral domain. The senior observers for the WFX's, General (Ret) Cavazos and Lieutenant General (Ret) Grange, point out when too much might be asked of a unit based on considerations of the moral domain.³³

BG Huba Wass de Czege points out that there is a tendency to attribute more to the results of computer simulations than they warrant because they are cloaked in an aura of scientific

legitimacy.³⁴ One of the problems with computer simulations is that they can lead to an overly mechanistic approach to determining combat power. For example, favorable force ratios become determinants of success or failure. He says such counting methods lead to fatalistic attitudes about the outcome of battle.³⁵

The 1976 version of FM 100-5, which introduced the army to the active defense, emphasized the necessity for favorable force ratios. Successful attack required a six to one ratio (attacker to defender) while successful defense required a 3 to 1 ratio.³⁶ In contrast, the 1986 version of FM 100-5 deemphasized force ratios and included maneuver, firepower, protection, and leadership as the dynamics of combat power. AirLand Battle doctrine emphasizes the "unquantifiables". Maneuver is the means of concentrating forces at the critical point to achieve surprise, psychological shock, physical momentum, and moral dominance, which enable smaller forces to defeat larger ones. Protection keeps soldiers healthy and maintains their fighting morale. Leadership provides purpose, direction, and motivation.³⁷

In the final analysis and once the force is engaged, superior combat power derives from the courage and competence of soldiers, the excellence of their training, the capability of their equipment, the soundness of their combined arms doctrine, and above all the quality of their leadership. (emphasis added)³⁸

Clausewitz said moral factors cannot be counted, they have to be seen or felt. He also said the moral elements are among the most important in war. Ignoring the moral factors can lead to courses of action that "will be too timid and restricted, or else too sweeping and dogmatic."³⁹ He goes on to point out that the outcome of battle has asymmetrical psychological effects on the

participants. The winner's courage increases while the loser's courage decreases, bringing on demoralization and disintegration.⁴⁰ S.L.A. Marshall makes the same point when he says, "Panic gathers volume like a snowball."⁴¹ Improved mathematical models may be able to take some of these factors into account, but it is doubtful we will ever be able to accurately model the moral domain with computers.

Conclusions Concerning the Training Environment

The JESS model and scripting portray the physical domain of battle fairly well. Catastrophic disruption to the cybernetic domain on the scale that American units experienced in the Battle of the Bulge does not occur. Still, division commanders and their staffs must deal with the fog and friction of war. The level of fog and friction they experience is probably much less than would be experienced in actual combat since the four lowest, and least experienced, echelons are not included in the exercise. The moral domain is missing from the simulation. The asymmetrical effect of winning versus losing is not modelled by JESS, nor are cohesion factors such as the recent influx of large numbers of replacements. However, the senior observers help ensure that moral considerations are not forgotten.

In spite of these limitations, the WFX is the most realistic CPX ever conducted. Clausewitz recommends that we "plan maneuvers so that some of the elements of friction are involved, which will train officers' judgement, common sense, and resolution."⁴² The BCTP training environment does this. WFXs are intensive and

generate enough effects to stress all of the battlefield operating systems. Observer-controllers can see command and staff coordination, problem solving, and decision making. Participants can learn specific as well systemic strengths and weaknesses in the AARs. In the next section, we will examine these strengths and weaknesses.

IV. Application of AirLand Battle in BCTP

Corps and divisions conduct combat operations within the training environment examined in the previous section. The training environment provides units the opportunity to enhance their ability to execute AirLand Battle doctrine (the BCTP goal). Next, we will analyze unit performance based on observations from their first WFX. This analysis will then serve as the basis for determining the extent to which BCTP is achieving its goal of enhancing the ability of division and corps to conduct AirLand Battle.

FM 100-5, Operations, says that the Army must fight in accordance with the four tenets of AirLand Battle to achieve success on the battlefield. These tenets will serve as the evaluation criteria for the ability of divisions to apply AirLand Battle doctrine. The following sections will examine unit performance in accordance with each AirLand Battle tenet: Agility, synchronization, depth, and initiative.

Agility

Agility -- the ability of friendly forces to act faster than the enemy -- is the first prerequisite for seizing and holding the initiative. To achieve this...leaders must

continuously "read the battlefield," decide quickly, and act without hesitation.⁴³

I have selected agility as the first tenet because of the requirement to read the battlefield. In this section we will examine how well units in BCTP WFX's "read the battlefield" and act quickly to seize the initiative.⁴⁴

Divisions have demonstrated significant weaknesses in seeing the battlefield and focusing combat power at the decisive time and place. For example, a division launches its counterattack too late, misses the opportunity to take advantage of a temporary OPFOR weakness, and instead attacks into strength. Artillery fires land on an empty road intersection. Attack helicopters find no enemy targets in their engagement area. The list goes on. Underlying these weaknesses are shortcomings in the ability of the division staff to conduct effective intelligence preparation of the battlefield (IPB) and use IPB products to support the decision process.⁴⁵

Initial IPB within the G2 is not the issue. For the most part, division G2's develop an outstanding initial IPB. However, IPB products often fail to be coordinated with the rest of the staff, or are not updated as the battle progresses. For example, in one division, the G2 had a full array of well prepared IPB products developed to support the division OPLAN, including an avenue of approach overlay, situation template, free flight zone-minimum risk route overlay, combined obstacles overlay, event template, collector overlay, and a decision support template (DST). Unfortunately, none of these products were used in the G3 plans during the exercise. In fact, during one point in the exercise,

the DST could not be located and was "lost" for approximately 12 hours.

The DST is supposed to highlight the commander's opportunities to ensure timely and accurate decisions. Decision points on the DST cue the commander and staff to make proactive decisions. However, many units do not use the DST. If they have one, it tends to remain confined within the G2 section and unavailable to the rest of the staff. As a result, trigger points and calculation of time-distance factors are frequently unavailable to the decision makers.

Analysis of BCTP final exercise reports indicates that in many cases the DST development process is not understood. FM 34-1, Intelligence and Electronic Warfare Operations, says, "The commander, G2, G3, FSE, and EWS (electronic warfare section) develop the DST by overlaying the event template, war gaming enemy courses of action, and then placing decision points and TAI's to all friendly courses of action."⁴⁶ This clearly is not happening on WFX's. Rarely do representatives from the G3 or FSE get involved in development of the DST. This is why DST's, produced in a vacuum by the G2, get lost on WFX's. This is also why planners stumble over questions about time-distance factors in mentoring sessions with the senior observers.

Commanders also have difficulty seeing the battlefield because the IPB process does not continue once the battle begins. Since the BCTP OPFOR is competitive, he may choose an unanticipated course of action. Or he may be executing the course of action we expected, but at a different tempo. In any event, one can be sure

he probably won't do exactly what was anticipated. Staffs must determine what course of action he is executing and then quickly decide how to counter it and seize the initiative. This requires effective event templating, which assists in determining what course of action the enemy has committed himself. Next, DSTs must be adjusted and updated. Very few divisions have demonstrated the ability to adjust the DST through event templating during a WFX.

Another problem with seeing the battlefield is what COL Carl Ernst, present commander of BCTP, calls inability to "think Red." Many, if not most, units expect an overly rigid and doctrinal OPFOR. Over the years an institutional mind-set has developed concerning what we expect the enemy to do. However, the uncooperative OPFOR, like the real enemy, uses deception to achieve surprise. His deception efforts reinforce our preconceived notions. COL Ernst recommends officers study Taktika, the Soviet version of FM 100-5. It stresses achieving surprise by studying enemy strengths and weaknesses, and displaying creativity:

To attain surprise means to mislead the enemy, to capitalize on his unpreparedness, to display maximum combat proficiency, strategem, and resourcefulness, and to surpass the enemy in military art.⁴⁷

Interviews with observer-controllers indicate there have been several cases where key members of divisions become frustrated when the OPFOR fails to perform as has been expected. The attitude that a "real OPFOR wouldn't do that" reflects a shallow understanding of Soviet doctrine and a dangerous vulnerability to Soviet deception.

Another factor that affects the ability to see the battlefield is the mismanagement of priority intelligence requirements (PIR)

and intelligence requirements (IR). Typical weaknesses include a "shotgun approach." For example, one of the corps commander's PIR's might be location of an enemy independent tank regiment (ITR). It is not unusual for this type PIR to get tasked all the way down to battalions through the intelligence annex in the OPLAN. Obviously, by the time main battle area (MBA) units make contact with the ITR, it is too late for purposes of the corps' fight. Thus, PIR's do not properly focus the collection effort in accordance with capabilities of the tasked unit. Another problem many units have is updating the PIR as the battle develops or transitions from offense to defense, again resulting in less than optimal use of collection assets.

Before we finish with seeing the battlefield, we must discuss information processing. Even if the collection system is working perfectly, the information must be timely and accurate. For example, in one WFX, the commanding general did not learn that the enemy had seized a decisive objective until three hours after the action had occurred. He received the information during a routine update briefing from the night shift. In another WFX, the G2 section was receiving spot reports at the rate of 50 per hour. The G2 section was unable to systematically post and analyze the information fast enough to keep up with the information flow. As a result, the G2's picture of the enemy situation was about two hours behind reality. In another division the operations map in the DTAC averaged one to three hours late, while those in DTOC averaged three to five hours late. Accuracy is also a problem. In one division, on the first day of the exercise, only 45 percent of

friendly units were correctly reported and plotted at the division main CP. Accuracy improved to over 80 percent correct by the fourth day of the exercise, but then fell again.⁴⁸

In addition to seeing the battlefield, march planning is another area that needs improvement in the area of agility. Again, the uncooperative OPFOR will usually try to interdict friendly unit moves. Reserve units, moving out of assembly areas, are often slowed down by OPFOR chemical strikes. Road congestion caused by other friendly units often slows units, too. Units should avoid predictable routes, plan alternate routes, and ensure march planning is detailed enough to prevent traffic jams.

Some divisions have demonstrated a great deal of agility in spite of the above weaknesses. This is usually due to the mental agility of the division commander and his personal effectiveness in commanding and controlling the division. However, because his staff is unable to keep up with him, the level of synchronization suffers. We will next focus on the ability of divisions to synchronize operations on these fast-paced exercises.

Synchronization

"Synchronization is the arrangement of battlefield activities in time, space, and purpose to produce maximum relative combat power at the decisive point." FM 100-5 further states that synchronization will usually require explicit coordination among various units and activities.⁴⁹

A common breakdown that occurs in staff coordination is between the fire support and intelligence systems in supporting the scheme of maneuver. Intelligence collection assets do not support the

fire support plans. A good example is in the counterfire program. Often, there is no coordination between the G2 and G3 to ensure collection assets are positioned to conduct target damage assessment. The artillery ends up firing tons of ammunition in counterfire and is unable to assess the effectiveness of their efforts. These shortcomings, like the difficulty with the DST discussed in the previous section, again highlight weaknesses in understanding the principles of situation and target development, and reflect an overly compartmented staff.⁵⁰

Another difficulty units have is in getting the effects of various systems to occur at the right place and time. Backward planning is key to this process. BG Clark says that divisions are getting better at backward planning, though most have not thought the process through before a WFX. He gives an example where Apaches crossed the FLOT and flew right into heavy enemy air defenses that destroyed every Apache. The commander was absolutely irate at the outcome. BG Clark explains backward planning using SEAD as an example:

If the division wants to send its Apaches deep, it must develop a SEAD (suppression of enemy air defenses) plan. To neutralize the air defense systems, you must first locate them. To locate them, you must cause them to give their location away. The problem is when you locate an SA8 or SA13, you have to shoot it very quickly because he may move. Since these are fleeting targets, your SEAD program needs to begin hours, perhaps days in advance in the particular area you want to bring the Apaches over. Air defense systems in that area must take priority over everything else. This way you reduce the amount of suppression you'll have to apply along your flight path, and you have reduced the possibility that there will be an unknown unit along the flight path that will be able to blast you.⁵¹

Here is another example of lack of backward planning, this time in ground maneuver. Two brigades were ordered to counterattack at about the same time. However, one brigade had to travel twice the distance of the other. The division did not provide guidance to either brigade concerning closure times or movement control measures to help synchronize movement. The counterattack failed because of the piecemeal commitment of these two brigades. Additionally, BCTP controllers have also noted that operations overlays in several cases have lacked the necessary control measures to synchronize movement.

General Cavazos emphasizes that one of the biggest problems he sees on WFXs is the inability of the staff to provide the commander accurate planning information in terms of time and distance. For example, when the commanding general asked how long it would take to move a brigade to a very obvious contingency area, his G3 said, "Oh, about 18 to 24 hours." When the commander asked the G2 if that would beat the enemy, he said, "We might be able to."⁵² LTG Grange adds that planners rarely forecast where they intend the FLOT to be when it gets dark or light. "Where do you want to be when the sun comes up?" is a question planners almost always stumble on in their first encounter with the senior observers.⁵³

Without some form of decision aid, it is extremely difficult to synchronize the diverse and often highly compartmented activities of the various battlefield operating systems. The DST helps cue the commander and staff to make proactive decisions based on enemy activity. We have already examined the weaknesses with DST's. Another planning tool, the synchronization matrix, helps ensure

that decisions consider all of the battlefield operating systems. BCTP observer-controllers say that units are confused concerning the use of these two planning tools.⁵⁴ Decision support templates are on maps -- a product of IPB and wargaming. They include decision points and target areas of interest. A synchronization matrix is typically a wall chart matrix with battlefield operating systems on the vertical column and time or events on the horizontal. Both of these decision aids help synchronize the battle.

Before finishing with synchronization, we will examine one more point. Electronic Counter Measures (ECM) are not routinely integrated into planning combat operations. Typically, hastily improvised jamming missions are eventually sent to the MI battalion after prodding by the commanding general. Frequently, there is no electronic target development or attack guidance or coordination of taboo, protected, and guarded frequencies. In many cases, the EW officer in the G3 section serves in this function as an additional duty which receives low priority during the exercise. Also, the Electronic Warfare Section in the DTOC Support Element has frequently been neglected and is not manned or employed to coordinate, task, and evaluate ECM operations.⁵⁵

Depth

Depth is the extension of operations in space, time, and resources... In tactical actions, commanders fight the enemy throughout the depth of his dispositions with fires and with attacks on his flanks, rear, and support echelons.⁵⁶

In this section we will focus on the ability to conduct deep and rear operations.

"The vast majority of units do not plan deep or rear operations very well. The close fight is what occupies everybody. I can't think of a single instance where I thought that anybody had put all of the parts of deep operations together."⁵⁷ As an example, in one division the main command post, instead of the DTAC, controlled close operations. As a result, planning for deep operations, one of the division's main command post's functions, suffered. Also, the OPLAN did not address the desired effects of deep operations in the concept of operation. During the battle, that division's deep operation effort focused on follow-on divisions (the corps' doctrinal deep target) rather than second echelon regiments of the first echelon division. In another division, during the final stage of the defense, corps allocated Lance and battlefield air interdiction (BAI) assets to the division. The division had not been nominating targets or planning for the use of these assets. As a result, the allocation of LANCE and BAI prompted frantic efforts within the G2 operations to develop appropriate targets. The net result was untimely and inaccurate targets and ineffective use of the Lance and BAI. Still in another division, deep attacks were often initiated into engagement areas in the hope of finding a target of opportunity, and then diverted to other targets of opportunity as they presented themselves.

Part of the targetting problem in the above examples is due to the limited capabilities of current intelligence assets.

LTG Graves, Commander of III Corps, makes the point that the corps

intelligence system provides the commander and staff with information needed on the enemy to plan and execute combat operations, but generally inadequate for targetting. As a result, he relies mainly on templating to conduct the deep battle.⁵⁸ Even under the best circumstances of planning and synchronization, deep operations carry inherently larger risk factors.

Another difficulty being encountered is the effectiveness of BAI or AI against moving targets, i.e., follow-on regiments. According to BG Clark, "The Air Force says, give me a bridge over the Elbe River. They're pretty sure they can find a bridge...and with precision guided munitions, they're pretty sure if they send enough aircraft out there, they can take the bridge out."⁵⁹ The Air Force is least effective at attacking moving armored columns. They may not even find them. They much prefer stationary targets.

BG Clark continues that he has not seen results proportionate to the effort expended in the deep battle.⁶⁰ For example, when Apaches attack across the FLOT against second echelon regiments, the turn-around time, targetting problem, SEAD requirements, and risk to the helicopters make it far preferable to use Apaches in the close fight, along with the indirect fire that would have been expended in the SEAD program.

Technically, counterfire is part of the close battle. However, the counterfire program can have such a decisive effect that General Cavazos says there are four fights: deep, close, rear, and counterfire. The OPFOR outnumbered the U.S. in tubes several times over. The DIVARTY Commander has been fighting alone and losing. Units have not been synchronizing other systems such as

intelligence, close air support (CAS), BAI, and helicopters to get the synergism needed to fight outnumbered and win the counterfire battle.⁶¹

Under direction of the assistant division commander for support (ADC-S), the rear CP is responsible for terrain management, movement control, synchronization of sustainment, and security.⁶² Terrain management and security have been done fairly well. The key to terrain management lies in fixing responsibility for the function, i.e., it cannot be a shared or additional duty. Level III threats usually involve an OPFOR airborne or airmobile insertion in the rear. Units succeed because they immediately concentrate enough combat power to quickly defeat the OPFOR, using tactical combat forces, engineers, and military police. However, the details of base cluster defense need improvement across the board. For example, isolated base and base cluster defense plans and sketches often do not make it to the rear CP for development of a comprehensive rear area defense, which includes a fire plan and use of engineers.

Next, we will discuss movement control and synchronization of sustainment. These are weak areas. As stated before, JESS is remorseless when it comes to movement. Prioritization and deconfliction of movement in the division rear is a big job, even in a light division. For example, a light division operating in restrictive terrain had 4,000 vehicles in its division rear on a WFX. The movement control officer (MCO) is doctrinally responsible for the management of transportation assets in the division's truck company and may not have been trained to synchronize the main

supply route (MSR), maintenance and traffic control to the extent needed for movement control.

One of the biggest weaknesses in sustainment involves reconstitution. Reconstitution planning needs to start in the Main CP. It usually does not. Since plans officers do not forecast reconstitution objectives and priorities, the logisticians operate in a reactive mode.⁶³

Units that have performed rear operations most successfully had these characteristics: All four rear operations functions (terrain management, movement control, synchronization of sustainment, and security) were performed and integrated by the rear CP. No units moved through the division rear area without the rear CP's approval. The ADC-S was actively involved and instilled discipline needed to make the system work.

Manning the rear CP has proved to be a challenge that may require organizational changes. For example, of the 36 personnel included in the division rear CP in one division, only six were authorized in the division HHC TO&E. The rest came from various other organizations and would not have been available if the full division had been deployed.

Initiative

"Initiative means setting or changing the terms of battle by action. It implies an offensive spirit in the conduct of operations."⁶⁴ Divisions have problems seizing the initiative if they are unable to apply the tenets of agility, synchronization, and depth. For example, one division failed to turn the tables on the attacker because the division had been unable to see the

battlefield, focus combat power, or execute effective targetting. In another example, counterattacking brigades were unable to exploit a temporary enemy weakness because the brigades' movement to their attack positions was delayed by enemy chemical strikes and road congestion. Another division's plan did not provide enough depth. It had a "weak and shallow security zone." As a result, the division reserve had to be committed to blocking an early penetration, instead of counterattacking to seize the initiative.

One division provided an outstanding example of seizing the initiative during the defense. The mission included covering force operations, defense of the MBA, and two separate counterattacks. The division gained the initiative within 24 hours and maintained it until ENDEX. This unit quickly determined the enemy's intent through effective employment of its intelligence system, and by the commanding general locating himself initially forward in the covering force area to better see the battle. He repositioned forces to blunt a possible penetration, and launched decisive counterattacks which caused the enemy to react to U.S. actions. This division was commended for its agility by the observer-controllers. Agility is the first prerequisite for seizing and holding the initiative.

WFX's have shown that a successful counterfire program significantly assists the ability to seize the initiative. Indirect fire assets figure greatly in the OPFOR's computation of correlation of forces. When the OPFOR loses significant amounts of artillery in his strike zone, he makes major lateral shifts of artillery assets. This throws off his timing and telegraphs his

intent. This is one of the reasons the corps controlled counterfire program will probably become more standard in the future.

A trend noticed by COL Ernst is failure to concentrate combat power at the decisive time and place. He traces the fault back to initial planning. COL Ernst points out that he has seen several units confronted by a tactical situation that required a penetration form of maneuver. Yet, no one referred to the maneuver as a penetration. Using the correct doctrinal terminology to describe a form of maneuver helps build a common vision. He suggests commanders include the doctrinal form of maneuver from FM 100-5 in their intent.⁶⁵

Even if the above weaknesses are corrected, seizing the initiative will remain a great challenge in the WFX. This is because every WFX is designed to stress all the battlefield operating systems. To do so requires the OPFOR to be strong enough to place the division's or corps' survival at stake. In some cases in the past, mistakes by the OPFOR in this free play exercise helped divisions seize the initiative. However, the OPFOR can be counted on to learn from his mistakes and make fewer in the future. He also hates to lose.

According to BG Clark, initiative is extraordinarily important. AirLand Battle doctrine requires us to defeat attacking enemy forces that are three times larger than the defender. To do this we must disrupt the enemy's plan. BCTP exercises indicate that seizing the initiative in war is a difficult problem:

It is easy to see how to synchronize. It is an organizational challenge. It is not an intellectual challenge. But initiative -- that is art. That is an entirely different thing. [Initiative] is related to the character of the commander. It is related to his determination to be offensive minded. It is related to his stubbornness in persisting in his intent even in the absence of good information. It is a very personal thing. And so, in my view, that tenet is separate from and has somewhat higher priority than the others.⁶⁶

General Cavazos also focuses on this aspect of generalship. He notes that commanders who do not conduct their own estimate put themselves at the mercy of their staff. Staffs have demonstrated a lack of cunning and guile on WPXs. They formulate unimaginative courses of action. Typically, a staff recommendation includes a good course of action, a variant of the good one, and a "throw-away". According to him, the best course of action is the one that gives the most options at the last minute.⁶⁷ LTG Grange also makes an argument for guile and cunning. He says the enemy often anticipates what at first looks like the best course of action. This course of action can be used for deception, like the D-Day deception at Calais, while the actual invasion went into Normandy. Thus, a suboptimal course of action can preserve flexibility and facilitate deception.⁶⁸

Conclusions Concerning Application of AirLand Battle

The preceding analysis highlighted shortcomings in the application of AirLand Battle. Lack of individual and staff proficiency in warfighting skills combined with limited capabilities in deep targetting caused many of these shortcomings. Specifically, we can draw the following conclusions:

First, staffs lack the proficiency to apply doctrinal procedures and techniques that help the commander see the battlefield. The underlying weakness in seeing the battlefield lies squarely on the failure of divisions to manage their intelligence system, and produce and use intelligence products after the battle begins. Not continuing the IPB process after the battle begins is a common shortcoming. Poor management of PIR (and collection assets), inefficient information processing, and expectations of an overly rigid OPFOR also contribute to inability to "read the battlefield."

Next, commanders and staff fail to effectively use doctrinal tools and processes that facilitate agility and synchronization. Decision support templates tend to be regarded as the G2's tool, instead of the commander's and G3's tool. Branches and sequels are missing in plans. Units don't backward plan and often omit key operating systems. Units plan marches on obvious routes, fail to provide alternate routes and deconfliction schedules, and often end up with road congestion. As a result, all available combat power fails to be concentrated at the decisive time and place.

Third, there are significant problems in the deep battle. Units do not achieve proportionate results in relation to the effort expended in deep operations. This is a violation of the principle of mass, because the assets expended deep would be better used in the close fight, which is decisive. This may be due to the lack of capability of current intelligence systems to target deep in real time, as well as the previous staff proficiency weaknesses discussed in seeing the battlefield and synchronizing operations.

In any event, deep operations are usually ineffective, and combat power spent on deep operations is unavailable for the close battle. However, one must keep in mind that since the cybernetic and moral domains are not fully represented, the disruptive effect of deep operations in the WFX may be less than would otherwise occur, thus contributing to the perception that deep operations are detracting from, rather than assisting the close fight.

Fourth and last, seizing the initiative has been a difficult task on the BCTP WFX's. Units that have seized the initiative have done so through agility. This is the area where the ability of the commanding general to act decisively, often on only sketchy information, is challenged. Since BCTP's charter is to stress all of the operating systems, commanders can expect seizing the initiative to remain the most difficult aspect of the WFX.

V. Conclusions

Thus far, this study has looked at the structure of BCTP, its ability to portray the domains of battle, and how well units apply AirLand Battle doctrine in the WFX's. We have concluded that though the training environment has some shortcomings in representing the cybernetic and moral domains of battle, the WFX is still the most realistic CPX possible. The World Class OPFOR and sophisticated controls (e.g., truth filters and scripting) produce a battlefield environment of chance, uncertainty, friction and fog, while at the same time stressing the division's battlefield operating systems to the point of continued survival of the division. We have also seen that initial BCTP rotations have

demonstrated an overall weakness in the ability of divisions to fight in accordance with the tenets of AirLand Battle.

We will now turn our attention to the BCTP goal to enhance the ability of divisions and corps to conduct AirLand Battle. The final determination of success or failure of BCTP in achieving its goal is best determined by the division and corps commanders. So far, their responses have been overwhelmingly positive. Addressing his staff before their WFX, LTG Calvin Waller, Commander of I Corps said, "Trust me, this will be a learning exercise. BCTP is the best way to train without shedding blood that I've ever experienced."⁶⁹ He later emphasized that the WFX was a success even before it started, because of the amount of work his corps had put into preparing for it. LTG Carpenter, Commander of Combined Field Army in Korea, has arranged for BCTP to support him with annual Battle Command Seminars for the 2nd Infantry Division in addition to the biennial WFX, to help the division maintain its warfighting proficiency in the face of the more severe personnel turbulence it faces.⁷⁰

Unit performance improves during the WFX, much like it does at the NTC. This is because of the discovery learning process that occurs in the AARs. Major AARs bring together the unit general staff and subordinate commanders for a two-hour session led by senior BCTP staff and modeled on the NTC AAR. Three or four of these AARs occur during a WFX. By discussing key issues and performance items in the seven operating systems, units receive the feedback they need to improve performance. Additionally, "minor"

AARs are conducted by observer-controllers at their observation sites on an unscheduled time-available basis.

Unlike the NTC, BCTP offers commanders the opportunity to repeat the same mission, or "restart." For example, a task force commander at NTC may get only one chance to defend in the central corridor. In contrast, division and corps commanders can defend the Fulda Gap, stop the exercise after two days of operations, conduct AARs, adjust their plans, and run the exercise again. This capability gives the unit the opportunity to apply lessons learned in the AARs to the same mission and terrain (the OPFOR's actions will probably not be the same). Thus, the exercise design provides units the opportunity not only to learn about strengths and shortcomings, but also to test out new procedures and plans in the same scenario.

Senior observer mentoring sessions are another unique aspect of BCTP. Senior commanders, principal staff, and young officers in command posts and at JESS workstations have the opportunity to discuss the details of combat operations with some of the most experienced tacticians our army has ever produced.

Perhaps most important, BCTP provides divisions and corps an incentive to focus on warfighting at the division and corps level that has previously not been part of our peace time Army. It forces commanders to be involved. Highly trained observer-controllers surface systemic shortcomings concerning unit combat proficiency. Also, the desire to beat the OPFOR is an irresistible goal that provides motivation, though winning is not the definitive measure of performance since the OPFOR makes mistakes, too.

These incentives provide battle focus. Division and corps are increasingly coming to BCTP as better trained units as more has been learned about the program. In a recent article in Military Review, MG Carmen Cavezza explained how the 7th Infantry Division developed a program that consisted of a series of CPX's and seminars based on critical tasks from the division's mission essential task list. Final rehearsal was a corps supported CPX a month before the actual WFX:

...it is important to note that our philosophy was to learn all the lessons we could and make adjustments before the WARFIGHTER. We could then rely on the BCTP team to help us improve in a way that could only be accomplished by an external evaluation.⁷¹

BCTP also serves as a model for training. The same article described how the 7th Infantry Division's assistant division commander trained the new command team after the division change of command. He used the decision exercises based on the techniques learned at the Fort Leavenworth BCTP seminar.⁷² Some years ago, units "broke the code" on NTC preparation: Replicate the NTC as much as possible at home station. We can expect the same to occur with division level training. Divisions will fight clones of the World Class OPFOR at their corps battle simulation centers. They will find ways to evaluate themselves with observer-controllers, who will apply uniform standards learned in previous WFX's.

BCTP also provides the opportunity to accumulate knowledge. With only eighteen active divisions, we are dealing with a more limited training audience than at the other combat training centers. In addition to participating in its own WFX, division

planners and operators get the opportunity to participate as adjacent divisions in response cells when other divisions in their corps conduct the WFX. Many divisions maximize the training value of these opportunities to assist them in preparation for their own WFX. In addition, the divisions participate in their corps' WFX as do reserve component units (regiments and separate brigades), who otherwise would not have the opportunity to experience BCTP.

The incentive to perform well during BCTP also provides stimulus to sharing lessons learned. Already, in one thirteen-month period, four articles were published in Military Review describing the BCTP experience and lessons learned. Also, the Center for Army Lessons Learned recently published a bulletin containing corps and division lessons learned, heavily influenced by BCTP experiences.⁷³

One of the corps WFX's provided the opportunity to observe differences between divisions with previous BCTP experience and those without. Many of the shortcomings discussed in the previous section had been corrected by the BCTP experienced units. Planners could speak in terms of decisive terrain, where they wanted to be in the battle when the sun came up, and how that effected subsequent maneuver and fire planning. Detailed flow charts displayed time-distance calculations for the basic plan as well as contingencies. Staff officers could articulate why they had drawn control measures and objectives in one brigade's area of operations (AO), while in another brigade's AO there was only a phase line. The scheme of maneuver included such doctrinal terms as "coordinated attack" and "penetration." Fire support plans were as

detailed as the scheme of maneuver. Divisions were concentrating firepower. Deception plans were built into the scheme of maneuver with supporting attacks using the obvious avenues of approach, while the division main attack took the indirect approach. These are just a few of the examples of improvements that were observed.

Still, there are some aspects of war that are missing from the BCTP training experience. The cybernetic and moral domains of battle are not fully portrayed, as we have discussed. These will continue to be difficult to represent in simulations. Since large unit FTX's will become even rarer in the era of tighter budgets, more sophisticated techniques of conducting CPX's should be integrated into the WFX. For example, overlaying the WFX on a CPX like III Corps' Roadrunner, where headquarters move across the Texas countryside, analogous to the actual distance they would move in war, adds to friction in the cybernetic domain that would not otherwise be present. Expanding the capacity of JESS so that lower echelons (maneuver battalions) can deploy to the field, would also help. Combining the WFX with terrain walks will further enhance its training value.

An effective reading program could make up for some of the shortcomings in the BCTP experience. As we have already discussed, the BCTP reading program has not been very effective due to low unit participation. Part of the problem is the quantity of material that must be read by officers who are extraordinarily busy. For these reasons, the BCTP reading program would probably be much more effective if it were focused to provide "need to know" information for conduct of the seminar and WFX. The larger problem

of a reading program that professionally develops the officers and NCO's of the U.S. Army is an Army problem, not a BCTP problem. For this reason there should be an Army Reading Program with specific goals tied to increasing levels of responsibility. As combat experience continues to dwindle in our Army, the study of history becomes increasingly important to vicariously experience catastrophic situations in the cybernetic and moral domains.

In summary, BCTP is definitely enhancing the ability of division and corps commanders and their staffs to execute AirLand Battle Doctrine. It provides battle focus -- it links individual tactical competence to successful mission accomplishment of division and corps mission essential tasks. Commanders and staff officers learn experientially against the World Class OPFOR and through the mentoring of the senior observers. Competent observer-controllers ensure training is conducted to uniform standards and conduct AARs that result in "discovery learning." BCTP sets a standard that divisions and corps are beginning to emulate in their own training. The Army needs to improve this simulation, and more fully integrate it with creative training techniques and a professional reading program with "teeth" to supplement limitations in portrayal of the cybernetic and moral domains of war.

After observing the U.S. Army's first battles in North Africa, LTG Dwight D. Eisenhower wrote a Leavenworth classmate that our doctrine was sound. It was in the application of doctrine that the Army was failing.⁷⁴ First battles in BCTP, like the first battles observed by Eisenhower, demonstrate difficulty with the application of doctrine. They have also been rich in lessons learned.

Difficulty in deep targetting, the significance of counterfire, and command and control of rear operations are examples of lessons we have discussed that carry doctrinal, organizational, and equipment implications in addition to identifying training weaknesses. Unlike the battles Eisenhower referred to, today's generals and their staffs are not learning these lessons at the expense of American blood. The combat training center methodology, with its philosophy of a thinking opponent, has produced a training revolution. The application of this methodology to divisions and corps has the potential to reverse the historical first battle trend: inadequate preparation of commanders and staffs for the real world of combat.

(FROM BCTP INTERNAL OPERATING PROCEDURES)

APPENDIX A

DAILY SEMINAR SCHEDULE OF ACTIVITIES

	SEMINAR ROOM	BATTLE STAFF OPNS CENTER	BCTP MTT
0600	SITUATION UPDATE		PROVIDE SIMULATION RESULTS
0730	WORKSHOP	ANALYZE SIMULATION RESULTS PREPARE SITUATION UPDATE	CONDUCT WORKSHOP OBSERVE/WORK W/ BATTLE STAFF
0900	DECISION EXERCISE	SITUATION UPDATE COMMANDER'S GUIDANCE STAFF ESTIMATE PROCESS CDR'S DISCUSSION OF CURRENT SITUATION AND ESTIMATE COMMANDER'S DECISION CONCEPT AND INTENT	CONDUCT DECISION EXERCISE
1200	PT/LUNCH	LUNCH	
1330	AAR	OPORD BACKBRIEF; APPROVE OPORD; AFTER ACTION REVIEW	PREPARE FOR AND FACILITATE AAR
1430	WORKSHOP	WORKSHOP	CONDUCT WORKSHOP
1600	CDR'S TIME	COMMANDER'S TIME TO PREP. FOR FOLLOWING DAY	INPUT TO SIMULATION
1800	SIMULATION RUN	SIMULATION RUN TIME (EXTENDS INTO EVENING)	RUN SIMULATION, EXTRACT AND PREPARE SIMULATION RESULTS

PROFESSIONAL READING LIST

The following list of professional reading material is contained in your read ahead package. Within each category, they are listed in the order referenced in paragraph 3 of each seminar workshop advance sheet (see appendix 2).

CATEGORY A: REQUIRED READING (HOMESTATION)

FM 100-5, Operations, HQs, Department of the Army, May 1986.

FM 100-10, Combat Service Support, HQs, Department of the Army, February 1988.

FM 22-103, Leadership and Command at Senior Levels, HQs, Department of the Army, Jun 1987.

FM 71-100, Division Operations, HQs, Department of the Army, (Candidate Final Draft), August 1988.

Richardson, William R., 'The AirLand Battle in 1986,' Military Review, March 1986.

Luvaas, Jay, 'Some Vagrant Thoughts on Doctrine,' Military Review, Mar 1986.

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DePuy, William E., 'Toward A Balanced Doctrine: The Case for Synchronization,' Army, Nov 1984.

Leadership in Combat: An Historical Appraisal, United States Military Academy, West Point, New York, Aug 1984.

Argersinger, Steven J., An Operational Concept for the Defeat of the Soviet Decision Cycle, MMAS Thesis, Fort Leavenworth, Kansas, 1984.

Dick, C. J., 'Catching NATO Unaware: Soviet Army Surprise and Deception Techniques,' International Defense Review, 1986.

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- Thompson, Henry L., "The High Performing Staff," School for Professional Development, Fort Leavenworth, Kansas, 1984.
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- Mellenthin, F.W. Von, NATO Under Attack: Why the Western Alliance Can Fight and Win in Central Europe Without Nuclear Weapons, Duke University Press, Durham, NC, 1984.
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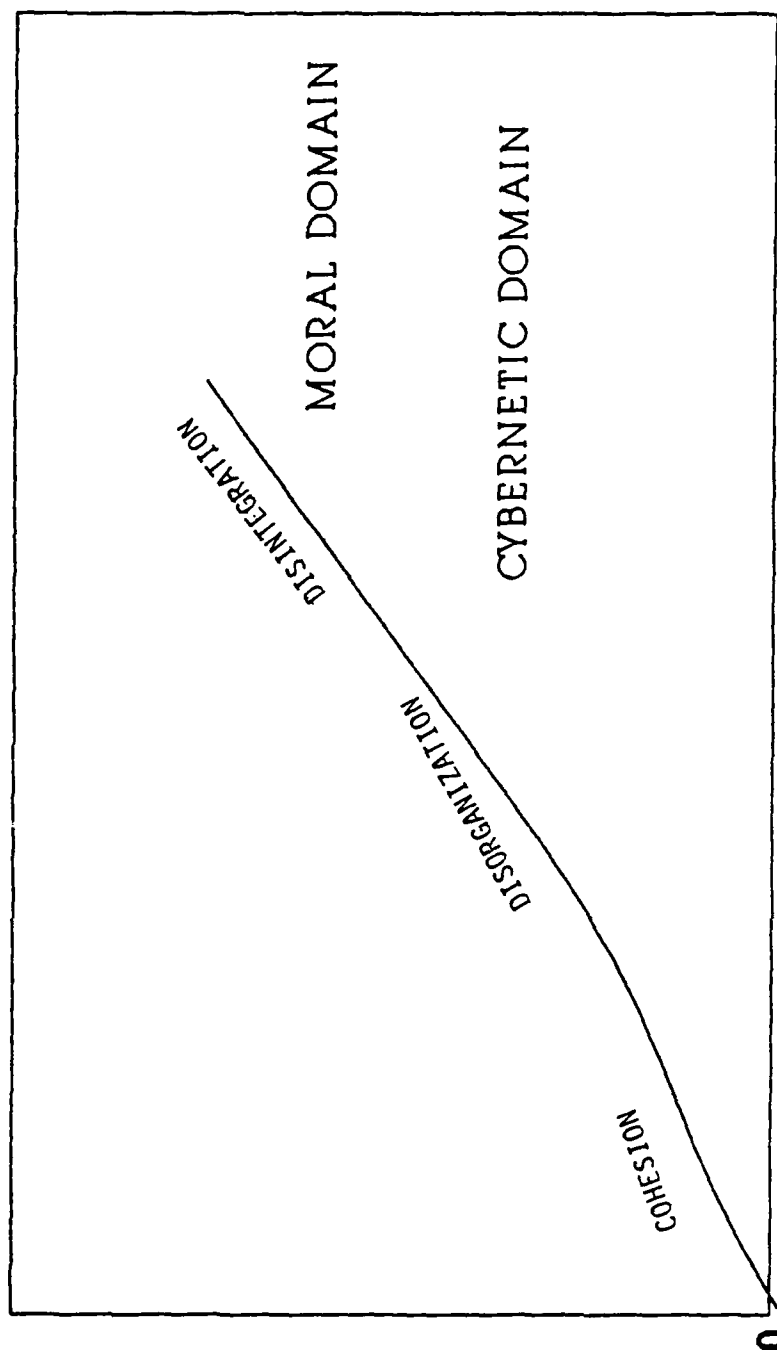
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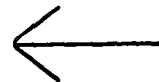
DESTRUCTION, DISORGANIZATION, DISINTEGRATION



DESTRUCTIVE TEMPO (PHYSICAL DOMAIN)



CASUALTIES



From: "Theoretical Paper No. 3"
by James Schneider

APPENDIX D - WEAPONS SYSTEMS

BLUE SYSTEMS

60MM MORTAR	CFV
81MM MORTAR	IFV
4.1 INCH MORTAR	ITV
105MM HOWITZER	M113 APC
155MM HOWTIZER (T)	DRAGON
155MM HOWITZER (SP)	TOW LAUNCHER (GROUND)
203MM HOWITZER	LUCHS
LARS	SALADIN
MLRS	SCORPION
LANCE	MILAN
LIGHT TANK	MARDER
MBT M60	HOT
MBT M1	JAGDPANZER
MBT M1A1	STINGER
LEOPARD I	VULCAN
LEOPARD II	CHAPARRAL
CHALLENGER	HAWK
CHIEFTAIN	RAPIER
HMMWV MK19	BOFORS
MOBILE TOW	GEPARD

RED SYSTEMS

60/82MM MORTAR	T-64/72 TANK
82MM AUTO MORTAR	T-64B TANK
120 MM MORTAR	T-80 TANK
160MM MORTAR	FST TANK
240MM MORTAR	FROG
ATGM AT-2	SS-21
ATGM AT-3/4	SS-23
ATGM AT-7	SS-1C
BMP-2 (W/AT-5)	SS-12
BRDM	120MM HOWITZER (2S9)
BMP/BMD	122MM HOWITZER (D-30)
73MM ATG (SPG-9)	122MM HOWITZER (D-74)
76MM FG (ZIS-3)	122MM HOWITZER (M-30)
85MM FG (D44/48)	122MM HOWITZER (2S1)
85MM GUN ASU	122MM HOWITZER (M-31/37)
100MM FG (M-44)	130MM FG (M-46)
100MM ATG (T-12)	152MM HOWITZER (D-20)
BTF-50	152MM HOWITZER (2S3)
BTR-60	152MM HOWITZER (DANA)
BTR-70/73/80	152MM G/H (ML-20)
BTR-152	152MM HOWITZER (D-1)
T-34 TANK	152MM HOWITZER (M-10)
T-54/55 TANK	152MM GUN (2S5)
T-62 TANK	180MM GUN (S-23)

RED SYSTEMS (Continued)

203MM GUN (2S7)	57MM (ZSU)
122MM MRL (BM-21)	100MM AAA
130MM MRL	SA-2 GUIDELINE
140MM MRL	SA-3 GOA
220MM MRL (BM-22)	SA-4 GANEF
240MM MRL	SA-6 GAINFUL
14.5MM ZPU-2	SA-7B GRAIL
14.5MMZPU-4	SA-8 GECKO
23MM ZSU-23-2	SA-9 GASKIN
23MM ZSU-23-4	SA-11 GADFLY
30MM (M-53)	SA-12 GLADIATOR
30MM (M-59)	SA-13 GOPHER
37MM (M-1939)	SA-14 GREMLIN
57MM (S-60)	SA-16

ARTILLERY MUNITIONS

HIGH EXPLOSIVE

IMPROVED CONVENTIONAL MUNITION

DUAL PURPOSE IMPROVED CONVENTIONAL MUNITION

FIELD ARTILLERY SCATTERABLE AERIAL MINES

NUCLEAR

CHEMICAL

PRECISION GUIDED MUNITION

AIR MUNITIONS

<u>BLUE</u>	<u>RED</u>
AIM 9	23MM
AIM 7	30MM
TOW	AT-3
HELLFIRE	550 LB BOMB
20MM	1100 LB BOMB
30MM	AIR-AIR MISSILE (IR)
AGM-45	AIR-AIR MSL (RADAR)
AGM-65	ANTI-RADIATION MSL
MK-20	
MK-82	
GBU-15	
1000 LB BOMB	
CBU-52	
CBU-58	
40MM	

AIRCRAFT

<u>BLUE</u>	<u>RED</u>
F-15	MIG-31 FOXHOUND
F-16	MIG-29 FULCRUM
A-10	MIG-27 FLOGGER
F-111	MIG-25 FOXBAT
OA-37	MIG-23 FLOGGER
OV-10	MIG-21 FISHBED
F-4G	MIG-17

AIRCRAFT (Continued)

BLUE

RF-4

FGR-2/F-4F/4-4E

F-4C/F-4D/F-4E

C-130

C-141

C-5

EC-130

MC-130

AWACS

ABCCC-130

KC-135

A-7

F/A-18

AV-8B

A-4M

A-63/BUCCANEER

EF-111/EA-6A/B

OV-1D/RV-1D

ALPHA JET

JAGUAR

TORNADO

F-104

MIRAGE

NF-5

B-52

RED

MFG-19

SU-27 FLANKER

SU-25 FROGFOOT

SU-24 FENCER

SU-17 FITTER

IL-28 BEAGLE

AN-2 COLT

AN-30 CLANK-A

AN-26 CURL

IL-14 CRATE

L-39 ALBATROSS

RED AWACS

RED TANKER

MI-25 HIND

MI-17 HIP H

MI-8

MI-2 HOPLITE

MI-6 HOOK

MI-4 HOUND

AIRCRAFT (Continued)

BLUE

AC-130

CH-46

CH-53E

CH-53D

AH-1

AH-1 HELLFIRE

AH-64

OH-58

UH-1/60

CH-47/54

EH-1

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⁴MG Glynn C. Mallory, "Combat Training Centers: Training the Force to Fight," Military Review (October 1987), pp. 65-7.

⁵BCTP Internal SOP, op. cit., p. 2-1.

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¹⁰James P. Kahan, et. al. "Implementing the Battle Command Training Program (Working Draft)," Rand Corporation, Santa Monica, CA, July 1989, p. 9.

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⁴⁴Unless stated otherwise, findings concerning performance trends in Warfighter Exercises are the results of my analysis of Warfighter Final Exercise Reports on file at the Center for Army Lessons Learned, Fort Leavenworth, Kansas. BCTP policy prohibits identification of specific units or citing specific reports.

⁴⁵See Center for Army Lessons Learned Bulletin, Corps-Division Lessons Learned, Combined Arms Training Activity, Fort Leavenworth, KS, Nov 89, pp. 7-9, for more information on IPB lessons learned.

⁴⁶DA, FM 34-1, Intelligence and Electronic Warfare Operations, 1987, p. 3-19.

⁴⁷V. G. Reznichenko, Tactics, (JPRS-UMA-88-008-L-1) 1987, p. 30.

⁴⁸See Center for Army Lessons Learned Bulletin, op. cit., p. 20, for additional lessons learned and suggestions on information management.

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⁵⁰After reading the Final Exercise Reports I am convinced that very few have a good understanding on situation and target development as described in Chapter 3 of FM 34-1, Intelligence and Electronic Warfare.

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⁵⁵See FM 34-1, Intelligence and Electronic Warfare Operations, July 1987, for the role of the Electronic Warfare Section. Final Exercise reports indicate a general weakness within the G3 concerning this area.

⁵⁶FM 100-5, op. cit., p. 16

⁵⁷Interview, MAJ Frandsen with LTC(P) Charles M. Black, Deputy Team Chief, Mobile Training Team A, BCTP. Fort Leavenworth, Kansas, 30 October 1989, p. 9.

⁵⁸LTG Richard G. Graves, Commander, III Corps. Briefing Conducted for the School of Advanced Military Studies, Fort Leavenworth, Kansas, 19 October 1989.

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